

TWO NEW LEPIDOPTEROUS BORERS.

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To the long list of injurious borers infesting cultivated and wild plants two new species must be added which, in Minnesota, are of especial interest, as they cause great damage to some of our trees, and even threaten to destroy them entirely in some regions.

All visitors to the Twin Cities admire our groves of oaks, chiefly composed of peculiarly branched and gnarled burr-oaks, and dark and straight red-oaks. The former, though badly infested by numerous species of insects, seems to be proof against any lasting injury by them. The tree is in fact so well protected with a corky bark, even found upon the youngest twigs, that both insects and intense cold seem to be powerless. This is quite different, however, with our red-oak, a tree of much quicker growth and but slightly protected by thin and glossy dark bark, at least when still young and not wrinkled by old age. Nature seems to have endowed the former, like a good mother, with a warm and enduring coat against insects and the inclemencies of winter, and to have treated the red-oak like the step-mother so much fabled about. The red-oak seems to have a very great attraction for all kinds of boring insects, but notwithstanding its wonderful power to repair injuries and to heal wounds made upon its bark and wood — a power not shared by the burr-oak — the tree is a doomed one, provid-

ing no steps are taken to protect it as well as it deserves. But all advice to protect any of our native trees is usually received with a smile that is more or less unpleasant to the true lover of nature, as it contains the elements of contempt, ridicule and derision for the adviser.

Among the worst borers of the red-oak are several lepidopterous larvae, but chiefly those of *Prionoxystus querciperda* (Fitch), *P. robiniae* (Peck) and *Trochilium luggeri*. The first (pl. 3, figs. 1 and 2), as well as the second species, are insects described long ago; the latter, and the most injurious one in this region, has been described by H. Edwards, our authority in this family of insects. Below is his description, illustrated by pl. 3, fig. 3.

Trochilium luggeri n. sp. Upper side of head black, orbits of eyes bright lemon yellow. Face black. Palpi black at the base, otherwise lemon yellow. Thorax with the disk black, with short erect downy hairs. Collar, patagia, spot at the base of the wings, and a broad streak at base of thorax conspicuously lemon-yellow. Antennae chestnut brown above, dull orange beneath. Tibiae orange, tarsi somewhat of a darker shade. Abdomen black, anal tuft pale orange, with bright yellow band at the posterior edge of all segments, those of the posterior segments much widened. Forewings thinly clothed with scales the costa narrowly dull orange as is also the oblique rather indistinct discal mark at the end of the cell. The space from vein 2 to vein 5 clear of scales behind the cell. Hind

